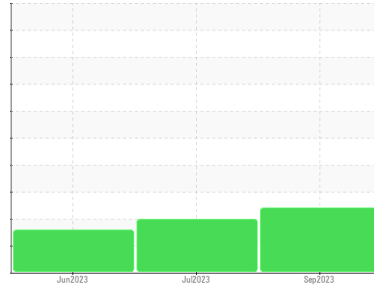




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
PETERBILT 3 (S/N 695898)

Component
Diesel Engine

Fluid
SHELL ROTELLA T 15W40 (--- QTS)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. Resample at the next service interval to monitor.

Wear

The copper level is abnormal. Bearing wear is indicated.

Contamination

Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition

The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0657267	WC0657268	WC0808459
Sample Date	Client Info		23 Sep 2023	25 Jul 2023	10 Jun 2023
Machine Age	mls	Client Info	1129261	1118580	1107776
Oil Age	mls	Client Info	10681	10804	9304
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	64	33	27
Chromium	ppm	ASTM D5185m	>20	5	4	1
Nickel	ppm	ASTM D5185m	>4	3	1	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	<1	1
Aluminum	ppm	ASTM D5185m	>20	8	5	2
Lead	ppm	ASTM D5185m	>40	<1	<1	2
Copper	ppm	ASTM D5185m	>330	▲ 428	118	15
Tin	ppm	ASTM D5185m	>15	1	<1	2
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	<1

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	316	90	85	46
Barium	ppm	ASTM D5185m	0.0	0	0	1
Molybdenum	ppm	ASTM D5185m	1.2	3	9	52
Manganese	ppm	ASTM D5185m		1	<1	2
Magnesium	ppm	ASTM D5185m	24	28	96	780
Calcium	ppm	ASTM D5185m	2292	1739	1719	1254
Phosphorus	ppm	ASTM D5185m	1064	812	847	1008
Zinc	ppm	ASTM D5185m	1160	1014	1018	1246
Sulfur	ppm	ASTM D5185m	4996	3222	3287	3785

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	▲ 44	▲ 33	▲ 39
Sodium	ppm	ASTM D5185m		4	3	8
Potassium	ppm	ASTM D5185m	>20	8	8	9

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	0.5	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.5	7.7	7.3
Sulfation	Abs.1mm	*ASTM D7415	>30	19.7	20.1	20.9

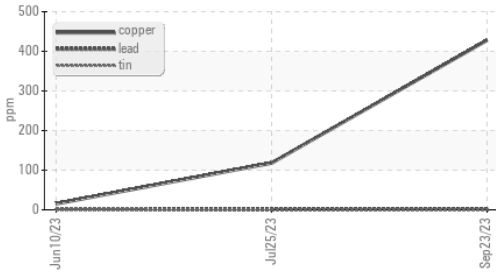
FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs.1mm	*ASTM D7414	>25	15.0	14.9	16.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	6	7.3	10.3

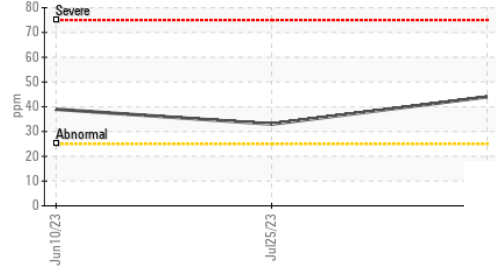


OIL ANALYSIS REPORT

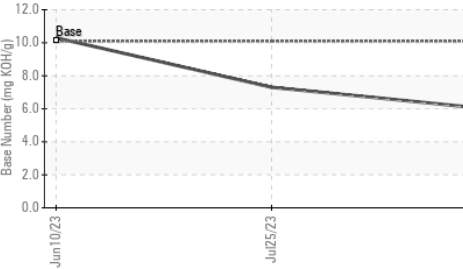
▲ Non-ferrous Metals



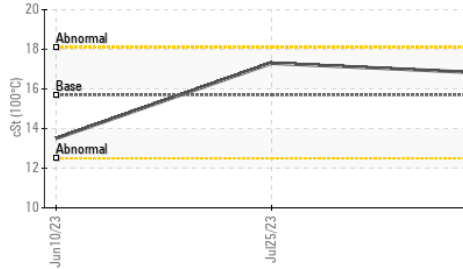
▲ Silicon (ppm)



Base Number



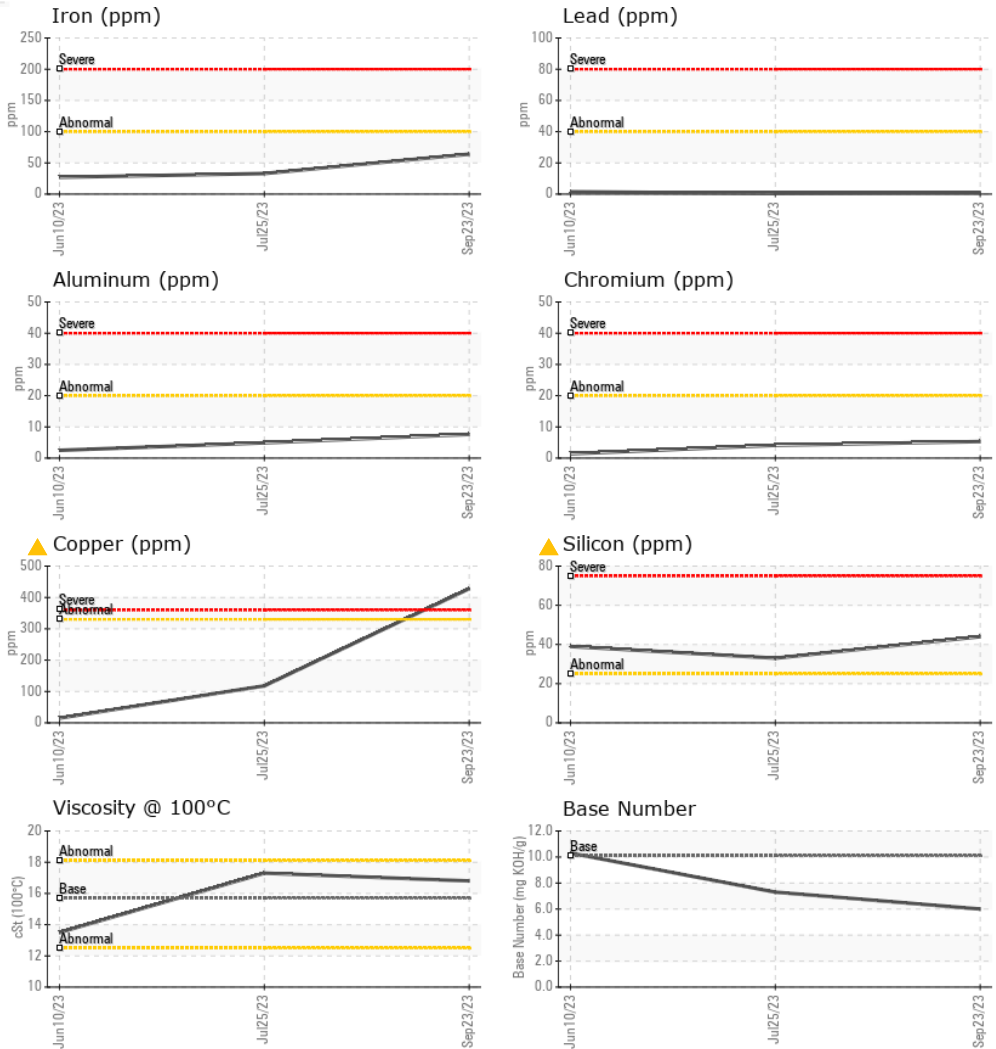
Viscosity @ 100°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	16.8	▲ 17.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0657267 **Received** : 03 Oct 2023
Lab Number : 05968223 **Diagnosed** : 05 Oct 2023
Unique Number : 10674774 **Diagnostician** : Angela Borella
Test Package : MOB1+

LONGMIRE LOGGING
 538 SANDERS FORK RD
 WOODVILLE, MS
 US 39669
 Contact: SERVICE MANAGER
 longmirelogging@gmail.com
 T: (601)807-6242
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)